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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,097	04/03/2006	Derek Cornes	70285	1174

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SYNGENTA CROP PROTECTION, INC.
PATENT AND TRADEMARK DEPARTMENT
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GREENSBORO, NC 27409

EXAMINER

BROOKS, KRISTIE LATRICE

ART UNIT	PAPER NUMBER
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1616

MAIL DATE	DELIVERY MODE
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01/22/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/560,097

Applicant(s)

CORNES ET AL.

Examiner

KRISTIE L. BROOKS

Art Unit

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of Application

1. Claims 1-15 and 18 are pending.
2. Receipt and consideration of Applicants amendments/remarks filed on November 3, 2008 is acknowledged.
3. Rejections not reiterated from the previous Office Action are hereby withdrawn. The following rejections are either reiterated or newly applied. They constitute the complete set of rejections presently being applied to the instant application.

New Grounds of Rejection Necessitated by Applicant's Amendment

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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5. Claims 1-6, 10, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fenderson et al. (US 5,716,901) in view of Banks et al., Glyphosate as a Postemergence Treatment for Johnsongrass Control in Cotton and Soybeans, *American Society of Agronomy*, 69:579-582,1977, Abstract.

Applicant claims a method for the season-long control of unwanted vegetation, said method comprising a single post-emergence application of a herbicidal combination comprising a 2-(substituted benzoyl)-1,3-cyclohexanedione or metal chelate thereof, glyphosate or a salt thereof and an acetamide.

Determination of the scope and content of the prior art
(MPEP 2141.01)

Fenderson et al. teach synergistic application of dimethenamid with at least one other herbicide (see the abstract and column 1 lines 47-59). It has been found that the co-application of dimethenamid and at least one other herbicide results in better and longer-lasting control of undesired plant growth (see column 1 lines 47-50). Examples of suitable herbicides include chloroacetamides (i.e. alachlor, acetochlor, metolachlor), glyphosate, sulcotrione, etc. (see column 2 lines 35-40, column 3 lines 5-10, column 6 lines 6-9 and 38). Both pre and post-emergence application to undesired weeds is possible with the combination (see column 4 lines 44-47 and column 7 lines 31-33). The formulations are particularly suitable for crops, such as, soybean and maize (corn) (see column 5 lines 62-64

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and column 6 lines 52-62). The formulations are suitable for post-emergence application to a variety of broadleaf and grassy weeds, including *Sorghum halepense* (seedling Johnsongrass) (see column 4 lines 44-47 and column 5 lines 1-2). The formulation can be formulated as a 2-way or 3-way mix (see column 7 lines 15-23 and 56-64, and the examples). Example 4 discloses a single application of the 3-way synergistic combination of dimethenamid/sulcotrione and atrazine:

§	Compound a.i./a.s	Bobinochlon control	expected additive effect	synergistic effect
	Atrazine 1500	23	—	
	Dimethenamid/Atrazine 1060/750	30	—	
	Sulcotrione/Atrazine 150/750	26	—	
	Sulcotrione/Atrazine 210/750	33	—	
Q	Dimethenamid/Sulcotrione/Atrazine 1060/150/750	55	35	+39
	Dimethenamid/Sulcotrione/Atrazine 1060/210/750	57	59	+42
		Sol/Atrazine/Chenopodia		
§	Atrazine 1500	16	—	
	Dimethenamid/Atrazine 1080/750	36	—	
	Sulcotrione/Atrazine 150/750	23	—	
	Sulcotrione/Atrazine 210/750	25	—	
Q	Dimethenamid/Sulcotrione/Atrazine 1080/150/750	97	53	+44
	Dimethenamid/Sulcotrione/Atrazine 1080/210/750	100	89	+11

Efficacy was evaluated 14 days later (see Example 4 in column 10 and claims 1-4).

Ascertainment of the difference between the prior art and the claims (MPEP 2141.02)

Fenderson et al. exemplify a synergistic combination of 2-(substituted benzoyl)-1,3-cyclohexanedione or metal chelate thereof (i.e. sulcotrione), an acetamide (i.e. dimethenamid), and atrazine being applied to unwanted vegetation, but do not exemplify the instant combination of 2-(substituted

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benzoyl)-1,3-cyclohexanedione or metal chelate thereof, an acetamide, and glyphosate or a salt thereof being applied to unwanted vegetation. This deficiency is cured by the teachings of Banks et al.

Banks et al. teach experiments conducted to evaluate the use of glyphosate in cotton and soybeans for Johnsongrass control. Glyphosate was applied postemergence to cotton and soybeans in the field. When directed to the basal of the crop stem, glyphosate provided season-long control of Johnson grass with the least amount of crop injury or yield reduction (see the abstract).

Finding of prima facie obviousness
Rational and Motivation (MPEP 2142-2143)

One of ordinary skill in the art would have been motivated to substitute glyphosate into the exemplified 3-way formulation taught by Fenderson et al. because Fenderson et al. suggests glyphosate as one of the possible herbicides that can be used in the formulations. Furthermore, glyphosate is a well known postemergence herbicide that can provide season long control of Johnsongrass weeds, as suggested by Banks et al.

Thus, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to substitute glyphosate (for atrazine) into the exemplified 3-way formulations taught by Fenderson et al., since glyphosate is an effective postemergence herbicide that is used to treat the same weeds (i.e. Johnsongrass) as taught in Fenderson et al. Moreover, it is *prima facie* obvious

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to combine known herbicides taught to be useful for the same purpose. *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

Although Fenderson et al. does not specifically teach seasonal control of unwanted vegetation, it is the Examiners position that since the herbicidal compositions taught by Fenderson et al. are shown to be effective 14, 30 and 60 days after application (see Examples 5 and 6), and since Applicant has described the length of time required for seasonal control to be "up to 120" in the instant specification (see page 2 lines 4-6), the limitation is met. Therefore, the claimed invention would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made because the prior art is fairly suggestive of the claimed invention.

6. Claims 1, 5, 11-14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feucht et al. (US 6,365,550), in view of Armel et al., Mesotrione, Acetochlor, and Atrazine for Weed Management in Corn, *Weed Technology*, Volume 17:284-290, 2003.

Applicant claims a method for the season-long control of unwanted vegetation, said method comprising a single post-emergence application of a herbicidal combination comprising a 2-(substituted benzoyl)-1,3-cyclohexanedione or metal chelate thereof, glyphosate or a salt thereof and an acetamide.

Determination of the scope and content of the prior art**(MPEP 2141.01)**

Feucht et al. teach a synergistic herbicidal composition comprising a combination of flufenacet and glyphosate, for weed control (see the abstract, column 1 lines 42-67, column 2 lines 1-10), and the claims. The active compound combinations are useful for post-emergence application (see column 5 lines 25-27, and Example A). The active combinations are useful on crop plants such as maize (corn), rice, wheat, etc. (see column 3 lines 53-56). The combinations are useful on weeds of the genera *Chenopodium*, *Amaranthus*, *Echinochloa*, *Digitaria* (i.e. crabgrass), *Brachiaria* (broadleaf), etc. (see column 3 lines 23-52). The active compound combinations may contain additional actives including herbicides (see column 5 lines 5-10). Example A discloses the combination of flufenacet (I) and glyphosate (II-I) being applied to weeds. After 3 weeks (21 days), the damage to the weeds is evaluated.

TABLE A1

<u>Post-emergence test results</u>					
Active compound(s)	Application rate (g a.i./ha)	<i>Amaranthus spinosus</i> control	<i>Alper-curus repens</i> control	<i>Echinochloa crus-galli</i>	<i>Chenopodium album</i>
(I)	40	60%	60%	80%	0%
(II-2)	30	0%	0%	0%	0%
(I) + (II-2)	60 + 30	90%	80%	70%	80%
		(60%)*	(60%)*	(50%)*	(0%)*

(see Example A, Table A1, in column 6).

Ascertainment of the difference between the prior art and the claims**(MPEP 2141.02)**

Feucht et al. do not teach a 2-(substituted benzoyl)-1,3-cyclohexanedione or metal chelate thereof. This deficiency is cured by the teachings of Armel et al.

Armel et al. teach field studies conducted to investigate the weed control and crop safety with postemergence (POST) applications of mesotrione alone and in mixtures with other herbicides (see the abstract). Mesotrione is a new herbicide registered for postemergence control of broadleaf weeds in corn (see page 284, introduction, third paragraph). Mesotrione has controlled several annual broadleaf weeds (*Brachiaria platyphylla*), large crabgrass (*Digitaria sanguinalis*), and barnyard grass (*Echinochloa crus-galli*), by post emergence application (see page 284, introduction, fourth paragraph and page 285, third paragraph).

Finding of prima facie obviousness

Rational and Motivation (MPEP 2142-2143)

One of ordinary skill in the art would have been motivated to incorporate a 2-(substituted benzoyl)-1,3-cyclohexanedione (i.e. mesotrione) into the formulation taught by Feucht et al. because mesotrione is a known for post emergent application to crops for the control of weeds, including broadleaf, crabgrass, and barnyard grass, as suggested by Armel et al.

Thus, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to incorporate a 2-(substituted benzoyl)-

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1,3-cyclohexanedione (i.e. mesotrione) into the formulations taught by Feucht et al., since it is mesotrione is an effective postemergence herbicide that is used on the same crops (i.e. corn) and used to treat the same weeds (i.e. Johnsongrass) as suggested by Feucht et al. Moreover, it is *prima facie* obvious to combine known herbicides taught to be useful for the same purpose. *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). And in the instant case, flufenacet, glyphosate, and mesotrione are all useful postemergence on corn, for the control of broadleaf, crabgrass, and barnyard grass.

Although Feucht et al. does not specifically teach seasonal control of unwanted vegetation, it is the Examiners position that since the herbicidal compositions taught by Feucht et al. are shown to be effective 21 days after application (see Example A), and since Applicant has described the length of time required for seasonal control to be "up to 120" in the instant specification (see page 2 lines 4-6), the limitation is met. Therefore, the claimed invention would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made because the prior art is fairly suggestive of the claimed invention.

7. Claims 1-9, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hudetz et al. (US 5,981,432).

Applicant claims a method for the season-long control of unwanted vegetation, said method comprising a single post-emergence application of a

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herbicidal combination comprising a 2-(substituted benzoyl)-1,3-cyclohexanedione or metal chelate thereof, glyphosate or a salt thereof and an acetamide.

Determination of the scope and content of the prior art

(MPEP 2141.01)

Hudetz et al. teach herbicidal compositions comprising S-metolachlor (formula A) and at least one additional herbicide selected from glyphosate, sulcotrione, etc. (formula I-VII) (see the abstract, column 1 lines 30-45, columns 2-9, and column 10 lines 11-15). It has been found that the single application of the combination of S-metolachlor and at least one additional herbicide are capable of effectively controlling a wide variety of weeds occurring in crops of useful plant postemergence without causing considerable damage to the plant (see column 1 lines 21-29 and column 10 lines 16-25). The combination are useful on crops, such as, cereal, maize corn), rice, etc. (see column 1 lines 8-13).

Example B1 test postemergence application of the a combination of a compound of formula I (S-metolachlor) and a herbicide of formula I-VII) (i.e. glyphosate, sulcotrione). The compounds were sprayed onto leaves and evaluated for efficacy after 18 days (see Example B1 in column 18).

Ascertainment of the difference between the prior art and the claims

(MPEP 2141.02)

Hudetz et al. do not exemplify the instant combination of 2-(substituted benzoyl)-1,3-cyclohexanedione or metal chelate thereof, an acetamide, and glyphosate or a salt thereof being applied to unwanted vegetation.

Finding of prima facie obviousness
Rational and Motivation (MPEP 2142-2143)

However, one of ordinary skill in the art would have been motivated to make the instant combination of 2-(substituted benzoyl)-1,3-cyclohexanedione (i.e. sulcotrione) or metal chelate thereof, an acetamide (i.e. S-metolachlor), and glyphosate or a salt thereof, and apply it to unwanted vegetation because Hudetz et al. suggest S- metolachlor in combination with at least one herbicide (i.e. sulcotrione, glyphosate) are highly effective in controlling a wider range of weeds and provides greater than expected additive action against weeds to be controlled.

Thus, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to make the instant combination of 2-(substituted benzoyl)-1,3-cyclohexanedione (i.e. sulcotrione) or metal chelate thereof, an acetamide (i.e. S-metolachlor), and glyphosate or a salt thereof, and apply it postemergence to unwanted vegetation for the purpose of broadening the spectrum of activity against weeds as well as achieving a high degree of weed control.

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Although Hudetz et al. does not specifically teach seasonal control of unwanted vegetation, it is the Examiners position that since the herbicidal compositions taught by Hudetz et al. are shown to be effective 18 days after application (see Example B1), and since Applicant has described the length of time required for seasonal control to be "up to 120" in the instant specification (see page 2 lines 4-6), the limitation is met. Therefore, the claimed invention would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made because the prior art is fairly suggestive of the claimed invention.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KRISTIE L. BROOKS whose telephone number is (571)272-9072. The examiner can normally be reached on M-F 8:30am-6:00pm Est..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on (571) 272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KB

/Mina Haghighatian/
Primary Examiner, Art Unit 1616